

National Aeronautics and
Space Administration

Goddard Space Flight Center
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Dear Reader:

Welcome to the Laboratory for Atmospheres' 2007 Technical Highlights report. I thank you for your interest. We publish this report each year to describe our research and to summarize our accomplishments.

This document is intended for a broad audience. Our readers include colleagues within NASA, scientists outside the agency, science graduate students, and members of the general public. Inside are descriptions of our organization and facilities, our major activities and science highlights, and our education and outreach accomplishments for calendar year 2007.

The Laboratory's approximately 230 scientists, technologists, and administrative personnel are part of the Earth Sciences Division in the Sciences and Exploration Directorate of the NASA Goddard Space Flight Center. The Laboratory for Atmospheres is continuing our mission of advancing knowledge and understanding of the Earth's atmosphere.

Laboratory scientists continued having a productive year organizing and participating in international field campaigns, developing and refining instruments, analyzing data, expanding data sets, and improving models. The Aura spacecraft, launched in July 2004 is an important component of the Lab's science activities through validation campaigns and data analysis and modeling. These efforts are helping us better understand our home planet's environment, and are increasing our knowledge of the complex chemistry of the atmosphere.

Several noteworthy events took place during 2007. Field campaigns contributing to Aura validation efforts in 2007 began with the SAUNA II campaign in Sodankylä, Finland during February. This year's largest mission, carried out in the summer of 2007, was the Tropical Composition, Cloud, and Climate Coupling (TC4) campaign. This effort involved personnel from all three of the Laboratory's branches, as well as investigators from other NASA Centers, NOAA, NCAR, universities, Costa Rica, and Panama. Other campaigns were the Cloud and Land Surface Interaction Campaign (CLASIC), and the Water Vapor Validation Experiment-Satellite/Sondes (WAVES_2007) at the Howard University Research Campus in Beltsville, MD. These, and several other field campaigns in which Laboratory members participated are described in detail in Section 4, Major Activities. WAVES_2007, which involved students from Howard University, as well as Laboratory members, is further discussed in Section 6, Education and Outreach.

As in previous years, Laboratory scientists garnered many top professional honors. Bob Adler (613) received the William Nordberg Award for his outstanding long-term contributions to precipitation science, in particular his dedicated efforts as TRMM Project Scientist in ensuring the phenomenal success of that mission. Tom McGee (613.3) received the Alan Berman Research Publication Award from The Department of the Navy and Naval Research Laboratory (NRL) for technical merit and clarity. Anne Douglass (613.3) and William Lau (613) were

honored as AGU Fellows at the AGU Honors Ceremony held in conjunction with the spring AGU Joint Assembly, Acapulco, Mexico. These, and numerous other awards received by Laboratory members, are described in Section 5.6 of this report.

We continued the very successful Laboratory Monthly Seminar Series, which focused on precipitation, clouds, aerosol and their physical/chemical linkages; details of the series can be found on our Web site.

The year 2007 was also a time to bid farewell to Jean Howard, our Laboratory's secretary for more than 3 years, and to retirees Andy Negri, and Chuck Cote. Andy had a distinguished career spanning 28 years as a Meteorologist in the Mesoscale Atmospheric Processes Branch. Chuck retired after 45 years of Government service. He served as the Associate Chief of our Laboratory for more than 20 years. I am pleased to welcome Ralph Kahn to our Laboratory staff. Ralph is joining the Climate and Radiation Branch where he will continue his work on aerosols carried out during his tenure at JPL. He is also active in educational activities and maintains an educational Web site described in Section 6 of this report.

This report is being published in two media: a printed version, and an electronic version on our Laboratory for Atmospheres Web site, <http://atmospheres.gsfc.nasa.gov>. It continues to be redesigned to be more useful for our scientists, colleagues, and the public. We welcome comments on this 2007 report and on the material displayed on our Web site. Your comments may be submitted online. Please check out our Web site.

A handwritten signature in black ink, appearing to read 'William K.-M. Lau', with a stylized flourish at the end.

William K.-M. Lau,
Chief, Laboratory for Atmospheres, Code 613

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